

HIGH SCHOOL EDUCATIONAL SPECIFICATIONS

FACILITIES PLANNING STANDARDS

EXAMPLE

February, 2008

**STATE OF WYOMING
SCHOOL FACILITIES COMMISSION**

INDEX

INTRODUCTION	4
ADMINISTRATION	8 – 5
INSTRUCTIONAL AREAS	9 – 10
SCIENCE	11 – 14
ART	15 – 18
MUSIC	19 – 21
MULTI-PURPOSE SHOP/LABORATORY	22 – 23
COMPUTER LABORATORY	24 – 25
BUSINESS EDUCATION	26 – 27
FAMILY AND CONSUMER STUDIES	28 – 29
MEDIA CENTER	30 – 33
PHYSICAL EDUCATION	34 – 38
AUDITORIUM	39 – 41
COMMONS/CAFETERIA	42
KITCHEN	43
CIRCULATION	44 – 45
CUSTODIAL	46
MECHANICAL, ELECTRICAL AND COMMUNICATIONS ROOMS	47
PLUMBING	48 – 49
TECHNOLOGY WIRING STANDARDS	50 – 51
ELECTRICAL AND SPECIAL SYSTEMS	52 – 55
SECURITY	56

SUMARY (Square Feet) 57

APPENDIX 58

HS Gross Square Feet per Student
High School – Acoustic Standard

BY REFERENCE:

National Best Practices Manual for Building High Performance Schools

SAMPLE

INTRODUCTION

This High School Educational Specification is a guideline to be used in planning and designing new and remodeling and renovating existing high schools. This Educational Specification describes the facility requirements to accommodate the instructional program, activities and support facilities. This document is a tool that is used to communicate basic facility design requirements and guidelines to architects, school districts, school staff and the School Facilities Commission.

Educational Specifications are guidelines that are critical to the development of an overall plan as they are applied to each individual school. Site adaptation and specific program requirements for each school district may be needed for each project.

These Educational Specifications are intended to be a dynamic document that allows for amendment as required to accommodate educational program changes. They should be reviewed and updated periodically by the School Facilities Commission.

This Educational Specification is intended to be used as a supporting document to other documents issued by the School Facilities Commission. It is not intended to supersede any other School Facilities Commission documents.

The Square Feet Summary in each section of these educational specifications shall be adjusted to the size of the facility as indicated in the Appendix: HS Gross Square Feet per Student.

ADMINISTRATION

SPACE DESCRIPTION:

The administrative area provides spaces for personnel concerned with the day to day operation of the school.

The administrative area should be located at the main entrance to the building and adjacent to the parking lot used by visitors. The main entrance should be visible from the administrative area. The area should also be in close proximity to, but separate from, Guidance and Counseling.

The guidance and counseling area should be near the main entrance; adjacent to, but separate from the administrative area and located for easy access to student traffic directly from a main corridor and possibly near the cafeteria/student center. Ideally this area would be adjacent to the Media Center.

A. Administration Spaces:

1. Principal
2. Vice Principal(s)
3. Secretary
4. Reception
5. Nurse/Toilet
6. Conference
7. Workroom
8. Staff Lounge
9. Staff Toilets
10. Itinerant Office(s)
11. Technology Support
12. Storage/Records

B. Guidance and Counseling Spaces:

1. Counselor Office(s)
2. Records and Storage
3. Conference

DESIGN CRITERIA:

Provide daylighting in all offices, work areas and lounge with a minimum of 20-30 fc of uniform daylighting throughout all spaces. Ceiling height in the Administration area shall be a minimum of 9'-4". All areas shall be ADA compliant.

A. Administration Spaces:

1. Principal:

- a. The office should be in a prominent location but also provide privacy when needed. The office should be adjacent to the administrative conference room.

- b. This office should accommodate an executive desk and credenza, side table with four chairs and bookshelves along one wall.
- c. There should be two doors, one opening directly into the secretary area and one directly into the administrative conference room.

2. Vice Principal(s):

- a. The number of offices will depend on the number of vice principals there are at the school. Each Vice Principal should have an office.
- b. These offices need to be in close proximity to the Principal's office and be accessible from the general reception/secretary area.
- c. Each office needs to accommodate an executive desk, side table with three chairs, bookshelves and two four-drawer legal files.

3. Secretary:

- a. Workstations should be provided for as many as four secretaries, depending upon the need of the school.
- b. Each secretarial workstation should have a standard secretarial desk to accommodate a computer, four four-drawer legal files and a telephone.
- c. This area shall be located to provide:
 - 1. General supervision of the reception area.
 - 2. Back-up to the Nurse.
 - 3. Good communication to principal and vice principals.
 - 4. Access to the conference room, workroom, storage and staff toilets.

4. Reception:

- a. This area will be a receiving point for students, parents and visitors to the administrative area.
- b. The receptionist may double as a secretary so the reception counter needs to be adjacent to and visible from the secretary area.
- c. The reception area should seat as many as twelve people. This area will also house the telephone, fire alarm and intercom systems central electronic controls.
- d. A front counter should be provided, the layout should accommodate an aisle between the counter and the secretary area.

5. Nurse/Toilet:

- a. This area should be easily viewed from the secretary area. On days when the nurse is not scheduled to be at the school, one of the secretaries fills this position as needed.
- b. A separate reception area for up to five students is desirable. This space should also have display space for health publications.
- c. This area should have an office for a nurse. The room should have a desk and be large enough to seat four people. It should be sound isolated for confidentiality.
- d. The Toilet should be handicapped accessible with an out swinging door.
- e. The bed area needs to have room for two beds and be separated by ceiling track mounted privacy curtains. Other equipment to be located in this area is:

1. Refrigerator
2. Scale
3. Lockable upper and lower cabinets with sink. The sink should have a gooseneck faucet and blade handles.

6. Conference:

- a. The conference room should be located centrally to the principal, vice principal(s) and secretary area.
- b. This space should be capable of accommodating groups of fifteen people.
- c. An option to have this room divisible for two small conference rooms should be considered.
- d. Variable lighting for presentations should be considered.

7. Workroom:

- a. The workroom needs to be adjacent to the secretary area to provide maximum usage and minimum foot traffic.
- b. This area needs to accommodate a copy machine, storage cabinets and worktables for production of daily tasks.
- c. This area will possibly be staffed by student volunteers or part-time aides.

8. Staff Lounge:

- a. The lounge provides staff breaks, lunch and meeting space.
- b. The lounge should be accessible but not necessarily contiguous to other administrative areas.
- c. Exterior windows are preferred.
- d. Provide two 4-foot x 4-foot tack boards.
- e. Provide 12 lineal feet of base and wall cabinets. One wall cabinet must be lockable.
- f. Provide a single stainless steel kitchen sink with hot and cold water, a gooseneck faucet and a garbage disposal.
- g. Provide space and utilities for a dishwasher, microwave and full size refrigerator.

9. Staff Toilets:

- a. Provide two single occupant handicapped accessible toilet rooms, one for men and one for women.

10. Itinerant Offices(s):

- a. Provide general office(s) with seating for two guests.

11. Technology Support:

- a. Provide general office(s) with seating for two guests.

12. Storage/Records:

- a. Provide a lockable room central to the administrative area.
- b. Provide floor to ceiling 12 inch deep adjustable shelves along one wall.
- c. Provide room for 10 to 15 filing cabinets.

B. Guidance and Counseling Spaces:

1. Counselor Office(s):

- a. Each office should be large enough to house a five-foot desk and executive chair, one four-drawer legal file and three side chairs.

2. Records and Storage:

- a. This space includes storage for guidance and counseling materials and publications. These can be stored on open adjustable shelving.
- b. Provide room for 8 to 12 four-drawer legal files.

3. Conference:

- a. This space is to be divisible into two spaces to be used as testing areas. When combined this space should provide conference space to ten people.
- b. This room should also be accessible from the administrative area.

SQUARE FEET SUMMARY:

A. Administrative Spaces:

- | | | |
|-------------------------|-----------------------|----------|
| 1. Principal | | _____ sf |
| 2. Vice Principal(s) | _____ @ _____ sf each | _____ |
| 3. Secretary | | _____ |
| 4. Reception | | _____ |
| 5. Nurse/Toilet | | _____ |
| 6. Conference | | _____ |
| 7. Workroom | | _____ |
| 8. Staff Lounge | | _____ |
| 9. Staff Toilets | _____ @ _____ sf each | _____ |
| 10. Itinerant Office(s) | _____ @ _____ sf each | _____ |
| 11. Technology Support | | _____ |
| 12. Storage/Records | | _____ |

Administrative Spaces Total _____ **SF**

B. Guidance and Counseling Spaces:

- | | | |
|------------------------|-----------------------|----------|
| 1. Counselor Office(s) | _____ @ _____ sf each | _____ sf |
| 2. Records and Storage | | _____ |
| 3. Conference | | _____ |

Guidance and Counseling Spaces Total _____ **SF**

Administration Spaces Total _____ **SF**

INSTRUCTIONAL AREAS

SPACE DESCRIPTION:

This Educational Specification can be implemented for either a departmental or interdisciplinary program. The instruction area includes space for general classrooms. Other specialized instructional areas are included in separate sections following this section.

Flexibility in space is essential for all general classrooms. Each instructional area shall include teacher workrooms, adequate storage and staff toilets.

A. Instructional Area Spaces:

1. General Classrooms
2. Teacher Workrooms
3. Storage
4. Staff Toilets
5. Special Education

DESIGN CRITERIA:

Provide daylighting in all academic rooms, work rooms and special education rooms with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Instructional Area Spaces:

1. General Classrooms:

- a. Folding partitions between some general classrooms should be considered to provide flexibility for group instruction and team teaching.
- b. Classroom utilities such as electrical, data, telephone, CATV, etc. are listed in the section Technical Wiring Standards.
- c. White board and Tack board: Provide sixteen lineal feet of each by 4 feet high.
- d. Provide a minimum of 12 lineal feet of lockable storage cabinets in each room for a variety of software, hardware, texts, etc. and capable of accommodating a minimum of 100 textbooks.
- e. All view windows shall have blinds to accommodate the darkening of the room for A/V presentations.
- f. Ceiling heights in all classrooms shall be adequate for direct/indirect lighting. Minimum ceiling height shall be 10'-0".
- g. Acoustics: See appendix for High School Acoustic Standard.

2. Teacher Workrooms:

- a. Provide space for individual work stations for all teachers. For maximum flexibility, it is suggested that systems furniture be used. Provide a minimum desktop surface for 32 inches x 48 inches with drawers, keyboard tray, wall shelves and a file cabinet for each teacher. Assume each workstation will have a computer and a telephone and that a printer located in the workroom will be networked to all workstations.

- b. Provide electrical power, data and telephone for each workstation.
- c. The workroom should also include space for informal meetings at a table with 4 chairs.

3. Storage:

- a. Provide a storage room at each teacher workroom to store books and supplies.
- b. Provide 12 inch deep adjustable shelving.

4. Staff Toilets:

- a. Provide two staff toilets, one for females and one for males.
- b. Toilet shall be ADA accessible and lockable from the inside with hardware that indicates when "Occupied".

5. Special Education:

- a. Special education programs provide instruction for students with special needs and moderate to severe handicaps. Student may spend part of their instructional day in the general classrooms and part in the special education classroom.
- b. The class size is generally smaller than the general classrooms and with instruction provided at tables and desks for individuals and small groups.
- c. Programs in special education vary greatly and the spaces should be designed to meet the specific needs of the individual program.

SQUARE FEET SUMMARY:

A. Instructional Area Spaces:

- | | | |
|-----------------------|------------------|----------|
| 1. General Classrooms | _____ @ _____ sf | _____ sf |
| 2. Teacher Workrooms | _____ @ _____ sf | _____ |
| 3. Storage | _____ @ _____ sf | _____ |
| 4. Staff Toilets | _____ @ _____ sf | _____ |
| 5. Special Education | | _____ |

Instructional Area Spaces Total	_____ SF
--	-----------------

SCIENCE

SPACE DESCRIPTION:

The High School science program is a laboratory-oriented, inquiry program in the areas of Earth Science, Biology, Physics and Chemistry. Instruction in the Science program requires the use of class with a maximum size of _____ students for discussion and laboratory work.

A. Science Spaces:

1. Physical Science
2. Earth Science
3. Biology
4. Physics
5. Chemistry
6. Laboratory Preparation/Storage
7. Teacher Workroom

DESIGN CRITERIA:

Provide daylighting in all academic rooms and work rooms with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Science Spaces:

Minimum ceiling height should be 10'-0". All rooms should have lockable doors, including doors for common preparation/storage rooms. All science area doors should have a common key.

1. Physical Science:

- a. Teaching Station: Orient students toward a teaching station equipped with a minimum of 16 feet of whiteboard, 8 feet of tackboard, projection screen and space for a demonstration table. Location of the teaching station should avoid students viewing whiteboard or projection screen from a wide angle.
- b. Counter space with lockable storage should be provided on all available walls. The storage space under the counters should be equipped with adjustable shelves. The wall above the counter should be used for tackboard, lockable glass front display cases and closed shelving.
- c. Floor should be a hard, cleanable surface.
- d. Ceiling should be acoustically treated to reduce above average sound level of laboratory activity.
- e. Provide a lockable glass front display case, key rack and a notebook cabinet.
- f. Electrical and data outlets (or wireless network) are required above the countertop along all casework counters.
- g. Fire detection should be provided by heat detectors rather than ion detectors.
- h. Provide emergency shower and eye wash facilities.

- i. Exhaust system should be independent of the HVAC system and have a manual control.
- j. All view windows should be provided with blinds to darken the room when needed.
- k. Indirect electrical lighting is preferred.

2. Earth Science:

- a. Same as Physical Science above.
- b. Provide a $\frac{3}{4}$ inch conduit with an outlet near the counter area to provide cable access to a rooftop weather station.

3. Biology:

- a. Provide _____ laboratory stations that will accommodate _____ students each. Each station should be equipped with electrical receptacles (two duplex), a sink with cold water, gas and lockable storage below with an individual storage drawer of at least one cubic foot for each student. Minimum station area is 24 sf. Plumbing should be acid proof. Top of workstation should be acid resistant.
- b. Teaching Station: Orient students toward a teaching station equipped with a minimum of 16 feet of whiteboard, 8 feet of tackboard, projection screen and space for a demonstration table. The demonstration table should be equipped with gas and a sink with cold water. Location of the teaching station should avoid students viewing whiteboard or projection screen from a wide angle.
- c. Counter space with lockable storage should be provided on all available walls. The storage space under the counters should have adjustable shelves. The wall above the counter should be used for tackboard, lockable glass front display cases and closed shelving.
- d. Provide lockable microscope cabinets to store a microscope for each student.
- e. Floor should be a hard, cleanable surface.
- f. Ceilings should be acoustically treated to reduce above average sound level of laboratory activity.
- g. Electrical and data outlets (or wireless network) are required above the countertop along all casework counters.
- h. Fire detection should be provided by heat detectors rather than ion detectors.
- i. Provide emergency shower and eye wash facilities.
- j. Exhaust system should be independent of the HVAC system and have a manual control.
- k. All view windows should be provided with blinds to darken the room when needed.
- l. Indirect electrical lighting is preferred.
- m. Sinks should have inside dimensions of at least 28 inches long x 16 inches wide x 7 inches deep.
- n. Provide gas and electricity cut-off controls which can be locked.

4. Physics:

- a. Same as Physical Science above.

5. Chemistry:

- a. Same as Biology above.
- b. Provide one fume hood with hood face velocity of 100 feet per minute. The hood should be two sided with access from preparation room and classroom and should be located as far away as possible from door openings.

6. Laboratory Preparation/Storage:

- a. Laboratory preparation area(s) should be adjacent to the classrooms and incorporate the storage area. To the greatest extent possible, the preparation/storage area(s) should serve multiple laboratories.
- b. Each area should have ten feet of counter space (chemical resistant in the Chemistry area) with a full size sink. The sink should have a garbage disposal and the inside dimensions should be at least 28 inches long x 16 inches wide x 7 inches deep.
- c. Provide one ten-lb. dry chemical fire extinguisher (rated 2A, 10B:C) ideally located within 25 feet of any point in the room, but no more than 50 feet. The extinguisher should be located at room exits.
- d. The door should have self-locking hardware and a closer.
- e. Shelving eight feet high with 18 inch deep adjustable shelves should be provided in the storage area.

f. Biology Preparation/Storage:

- 1. In addition to the counter indicated above, this area should provide utilities and space for a 16-18 cubic foot upright refrigerator, 30 inch electric range, full size dishwasher and autoclave.
- 2. Twenty-four hour special exhaust ventilation.
- 3. Floor drain that allows for fast flushing of storage room floor.
- 4. If the biology storage room is not conveniently located near the chemistry storage room, a fire resistant storage cabinet equipped with a flame arrestor should be provided.

g. Chemistry Preparation/Storage:

- 1. In addition to the counter indicated above, this area should provide utilities and space for a 16-18 cubic foot upright ice making refrigerator and a full size dishwasher.
- 2. Fume hood with minimum 100 feet per minute, located as far away as possible from door openings.
- 3. Floor drain that allows for fast flushing of storage room floor.
- 4. Chemistry storage shelving should be six feet high and contain 12 inch adjustable shelves with safety lip. One metal cabinet approximately four feet wide should be equipped with an exhaust fan or gravity vent for storage of corrosive chemicals. One flammable materials cabinet and one active metals cabinet should also be provided. Flammable materials cabinet should be equipped with a flame arrestor.
- 5. A separate self-locking chemistry pantry should be provided in the preparation room.

6. The storage room door should be self-locking with a closer.

7. Teacher Workroom:

a. A science department planning area, equipped with desks, file cabinets and bookshelves should be located near the classrooms and, if possible, the storage areas. Provide office space for the number of teachers in the science department. This room should not be a part of the Laboratory Preparation/Storage area.

SQUARE FEET SUMMARY:

A. Science Spaces:

- | | |
|---|----------|
| 1. Physical Science | _____ sf |
| 2. Earth Science | _____ |
| 3. Biology | _____ |
| 4. Physics | _____ |
| 5. Chemistry | _____ |
| 6. Laboratory Preparation/Storage ____ @ _____ sf | _____ |
| 7. Teacher Workroom | _____ |

Science Spaces Total _____ **SF**

ART

SPACE DESCRIPTION:

This area will provide instructional space for ceramics and drawing/painting/printmaking. The facility should be at grade to provide access for a service drive for delivery of supplies and materials. Natural north light is preferred, particularly for the drawing/painting/printmaking studio. Provisions should be made for darkening each studio for use of video presentations.

The ceramic and drawing/painting/printmaking studios should be designed as a cohesive unit. A kiln room must be provided adjacent to the ceramic studio. The teacher workroom should be accessible from each of the studios.

A. Art Spaces:

1. Ceramic Studio
2. Drawing/Painting/Printmaking Studio
3. Kiln Room with Storage area
4. Storage
5. Teacher Workroom

DESIGN CRITERIA:

Provide daylighting in all areas, except storage rooms, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. Minimum ceiling height shall be 10'-0". All areas shall be ADA compliant.

A. Art Spaces:

1. Ceramic Studio:

- a. This room will be dirty due to the residue from clay and plaster. It should have the look of a ceramic workshop area, rather than a tidy classroom. It should also contain an area for sculpture.
- b. Provide one spray booth, 2 feet deep x 3 feet wide x 5 feet high with an exhaust system, built on standard cabinet surface.
- c. Provide two wedging boards, 24 inches deep x 36 inches wide, standard cabinet height (concrete slab top).
- d. Provide two scullery sinks, double compartment, stainless steel, 24 inches x 21 inches with 12 inch high back and clay trap, with two 24 inch x 24 inch drain boards. Provide both with single lever swing spout faucets. Care must be taken in the design of the sieve in the clay trap, too small of a hole will require daily cleaning.
- e. Provide one wedging bench, 5 inches wide, free standing, firebrick surface, enclosed on three sides from bench top to ceiling.
- f. Provide a "Unistrut" display structure for hanging mobiles and three-dimensional sculptures from the ceiling. At one wall, provide a tackable surface with hanging display lighting on a dimmer bank for setting up pottery examples, prints and sculpture.

- g. Provide a large damp box for clay, three units 8 inches wide x 24 inches deep x 7 feet high with doors and adjustable shelves for a variety of clay projects. Metal screened or vented shelves. Cabinets, including doors, should be lined with galvanized metal. Locked storage cabinet for tools.
- h. A pug mill canopy vent hood is required to expel silica dust.
- i. Provide adequate space for 6 to 8 potters wheels with sufficient electrical circuits and drop cord duplex receptacles for all to operate at once.
- j. Provide four 4 feet x 4 feet heavy-duty workbenches with vices and supported by metal locker base.
- k. Provide two wall storage cabinets, 3 feet x 10 inches x 3 feet with pegboard.
- l. Student project storage: Provide six cabinets 36 inches wide x 24 inches deep x 7 feet high with seven adjustable shelves (3/4" thick) in each cabinet, double doors, lockable. Cabinet should be made of a material for wash-down cleaning.
- m. Provide 30 small individual student lockers (one cubic foot each) for students personal tools, supplies smocks, etc.
- n. Provide counter space next to sinks for cleaned tools, splash pans, etc. and also for glazing pottery. Also provide counter space next to sinks to mix glazes, clean pottery, wax ware, etc.
- o. Provide glass display case, for samples of three dimensional work, (5 feet long x 2 feet deep x 3 feet high) on a stand or legs to make the top of the case 6 feet high, with four tempered glass shelves (different lengths of one, two, three and four feet); lockable and lighted.
- p. Provide a glaze formulation table with waterproof top and dry chemical bins. Approximately 100 sf, preferably located in the ceramic storage room. It should have good lighting, ventilation, one utility sink, adjustable shelving above counter top for smaller amounts of dry chemical storage. This space should also house ten gallon glaze buckets.
- q. Provide a minimum of 4 feet x 4 feet tackboard.
- r. Provide 8 lineal feet of whiteboard.
- s. Provide a compressed air manifold system into all the art rooms with individual air hookups throughout each room for pneumatic tools and for the glaze booth.
- t. Provide floor drain trough with clay trap for easy washing down of floor.

2. Drawing/Painting/Printmaking Studio:

- a. This area should provide space for drawing, painting, printmaking and photography instruction. In-room storage should be minimized so maximum space is available for project work.
- b. Provide wall counter with two sinks approximately eight feet apart, double sinks 16 inches x 22 inches x 12 inches, standard swing faucet with clay traps. Stainless steel.

- c. Provide a “Unistrut” display structure for hanging mobiles and three-dimensional sculptures from the ceiling.
- d. At one wall, provide a tackable surface with hanging, adjustable display lighting (8 feet minimum) on a dimmer bank for setting up still life models, tacking up finished drawings, etc.
- e. Provide a wall screen or white surface for projection films and slides. Provide blinds on all windows.
- f. Provide vertical storage cabinets with built in vertical slot storage for paintings and drawings, two levels of 4 foot slots, 36 inches deep and 8 to 10 lineal feet. Slots should be 3 inches wide.
- g. Provide locking storage cabinets.
- h. Provide space for and 8 foot x 3 foot print press.
- i. Provide a vented fan and hood area above printmaking station to carry off acid fumes.
- j. Provide two double compartment, 21 inch x 24 inch, stainless steel scullery sinks with 12 inch high backsplash and clay trap. Extend drainboards on each side of the sink a minimum of 24 inches. Provide single lever controls and swing spouts.
- k. Provide 110V electrical receptacles at all counter tops.

3. Kiln Room with Storage area:

- a. Provide space for two electric kilns with “Envirowents”. Kiln size is a minimum of 7 cubic feet, plus storage space and shelving area for green ware.
- b. (Optional Gas fired Kiln): 12 cubic foot minimum, floor area will require 150 sf. Provide a gas shut-off valve outside the kiln room.
- c. Provide adequate controllable combustion and ventilation air for this room to:
 - 1. Control “reduction” firings
 - 2. Provide air for kiln operator
 - 3. Remove toxic fumes

4. Storage:

- a. Provide storage space for all art studios.
- b. Provide six sections of flat storage for drawings and paintings to accommodate 28 inch x 32 inch paper, 7 feet high, each section divided by shelves. Twenty lineal feet of open adjustable shelf storage, 32 inches deep x 48 inches wide, for projects, still life material, dry clay, plaster, buckets, etc.
- c. Provide 10 lineal feet of full height storage cabinets, three sections 4 feet wide x 30 inches deep, adjustable shelves for storing large drawing paper, mat board, paint, oils, and other instructional materials. Cabinets should be lockable.

5. Teacher Workroom:

- a. Provide workstations for all art instructors.
- b. Provide windows for viewing art studios.

SQUARE FEET SUMMARY:

A. Art Spaces:

- | | |
|--|----------|
| 1. Ceramic Studio | _____ sf |
| 2. Drawing/Painting/Printmaking Studio | _____ |
| 3. Kiln Room with Storage area | _____ |
| 4. Storage | _____ |
| 5. Teacher Workroom | _____ |

Art Spaces Total	_____ SF
-------------------------	-----------------

SAMPLE

MUSIC

SPACE DESCRIPTION:

The students will be engaged in a wide range of classroom activities that include performing, singing, composing, listening, viewing, demonstrating, reading, moving and writing. Additionally, experience in concerts, exchange assemblies, musicals, marching band, solo and ensemble work are provided. Materials to be used include musical instruments, audio-visual equipment, films, tapes, books and sheet music. The majority of regular class periods will be spent in large group instruction. The largest classes, both vocal and instrumental, will be from _____ to _____ students.

All music spaces should be grouped together. Both music areas, vocal and instrumental, should be in close proximity to the performance space. The instrumental music room should have convenient access to the playing field for the marching band. An entrance from the exterior directly to the music area is desirable.

A. Music Spaces:

1. Vocal Music Room
2. Instrumental Music Room
3. Ensemble Room
4. Practice Rooms
5. Teacher Workroom
6. Storage
7. Large Instrument Storage

DESIGN CRITERIA:

All spaces shall be ADA compliant.

A. Music Spaces:

1. Vocal Music Room:

- a. Acoustics: Separated, acoustically controlled facilities are required for both vocal and instrumental areas. This acoustical treatment means not only eliminating echoes, dead spots and excessive reverberation, but also preventing sound transmission through walls, floors, doors, ceilings, windows and air ducts. See the Acoustic Standard in the appendix.
- b. The use of carpet in all music rooms is desirable.
- c. Whiteboards should have two sets of music staff lines. Tackboards may be incorporated as part of the cabinet doors.
- d. The access of large instruments requires extra wide doors or pairs of doors, 6'-6" without a mullion. They should be of sufficient size to allow a grand piano to be moved in and out of the space. The area should also be designed to allow the movement of a grand piano from music rooms to the stage of the Auditorium.
- e. A minimum ceiling height of 16 feet should be maintained.
- f. Provide adequate storage for portable risers. Risers are positioned at the rear of the room in order for sound mixing to take place in front of the

vocalists and for movement and choreography rehearsal. A piano will also be placed in front of the vocalists.

g. Provide adequate storage and shelving to accommodate 120 – 9 inch x 11 ½ inch music folios, guitars, sheet music, books, records and tapes, and general storage.

h. A drinking fountain should be provided within the room.

i. Sufficient electrical receptacles and provisions are needed for use of quality CD/DVD players and tape-recording equipment as well as electric instruments (guitar, bass, piano, synthesizers) in regular rehearsal.

j. The lighting system should provide 50 foot candles maintained at 36 inches above the floor.

k. A sound amplification system, independent of a public address system is required.

2. Instrumental Music Room:

a. The room may be designed with a flat floor or a three-tiered floor. Tiered floors are expensive to construct and cannot be reconfigured. If a tiered floor is designed, tiers should not be constructed of concrete. The top riser at the back of the room should be a minimum of 120 inches deep; the remaining two other levels should be a minimum of 60 inches deep. The elevation between riser levels should be 6 to 8 inches.

b. Musical instrument storage is required to accommodate a minimum of 120 instruments within the instrumental music room and the storage room. Miscellaneous storage is required for sheet music, tapes CD's, DVD's and reference books. Provide in-room storage cabinets with locks 42 inch maximum depth x 62 inches wide x 84 inches high with doors that open no more than 90 degrees. Shelving within cabinets should have a protective edge to avoid damage from instrument cases.

c. Acoustics: See the Acoustic Standard in the appendix.

d. Provide a drinking fountain and deep sink with gooseneck faucet and blade handles with hot and cold water for cleaning instruments.

e. Sufficient electrical receptacles and provisions are needed for use of CD/DVD players and tape-recording equipment as well as electric instruments in regular rehearsal.

f. A sound amplification system, independent of a public address system is required.

g. Dual level lighting is recommended to provide a low level of 50 foot candles maintained at 36 inches above the floor and a high level of 100 foot candles maintained.

3. Ensemble Room:

a. Locate between the vocal and instrumental music rooms.

b. Must be acoustically treated to accommodate its intended purpose and sound isolated from other rooms.

c. Provide view windows for supervision from music rooms.

d. Provide a 4 foot x 8 foot whiteboard with music staff lines.

4. Practice Rooms:

- a. Provide _____ practice rooms located between the vocal and instrumental music rooms.
- b. Rooms must be acoustically treated and sound isolated from other rooms.
- c. Provide view windows for supervision.

5. Teacher Workroom:

- a. Locate adjacent to Vocal and Instrumental Music rooms with observation of both rooms.
- b. Provide work stations equal to the number of teachers in the Music program.

6. Storage:

- a. Provide space for 4 four-drawer legal files.
- b. Provide cabinets with doors and adjustable shelves for sheet music and reference materials.
- c. Provide wardrobe storage for choir robes and band uniforms.

7. Large Instrument Storage:

- a. Locate the storage room to provide efficient circulation and minimized moving of instruments.
- b. Provide storage cabinets and shelving for a variety of instruments and equipment types. Shelving should accommodate 120 concert size music folios 12 inches x 14 ½ inches.

SQUARE FEET SUMMARY:

A. Music Spaces:

- | | |
|-----------------------------|----------|
| 1. Vocal Music Room | _____ sf |
| 2. Instrumental Music Room | _____ |
| 3. Ensemble Room | _____ |
| 4. Practice Rooms 2 @ 50 SF | _____ |
| 5. Teacher Workroom | _____ |
| 6. Storage | _____ |
| 7. Large Instrument Storage | _____ |

Music Spaces Total	_____ SF
---------------------------	-----------------

MULTI-PURPOSE SHOP/LABORATORY

SPACE DESCRIPTION:

There should be two types of multi-Purpose Laboratories: One type will be a Technology Shop/Laboratory and the other will be a Fabrication Shop/Laboratory. These spaces and the number of each will depend on the specific programs of each School District. These spaces should be adjacent to the Computer Laboratory.

Technology Shop/Laboratory: This space(s) is a hands-on activity based instructional area and is student centered. Projects will be designed and engineered in this space. This space, while not a computer laboratory, should be well equipped with computers and modular workstations. Computers will be used as tools for the facilitation of learning in many technical areas of the students individual interests.

Fabrication Shop/Laboratory: This space(s) is a dirty room. Fabrication may consist of construction, mechanics and industrial type assembly of projects designed and engineered in the Technology Shop/Laboratory.

A. Multi-Purpose Shop/Laboratory Spaces:

1. Technology Shop/Laboratory
2. Fabrication Shop/Laboratory
3. Storage

DESIGN CRITERIA:

Provide daylighting in both shop areas with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Multi-Purpose Shop/Laboratory Spaces:

1. Technology Shop/Laboratory:

- a. The actual use and design of this space will vary with the specific programs of each School District and may accommodate more than one laboratory.
- b. Location shall be adjacent to the Computer Laboratory and the Fabrication Shop/Laboratory.
- c. The space should be accessible to service vehicles and have a service entrances and exits adjacent to driveways. This will facilitate the delivery of supplies and equipment and for use after normal school hours.
- d. Ceiling height should be a minimum of 12 feet with 14 feet preferred.
- e. All areas of the laboratory should be visible to the instructor to ensure maximum supervision of work and safety.
- f. Allow enough space between workstations and equipment for free flow of traffic and maintenance of equipment.
- g. Wet areas may be required by the specific instructional program.
- h. Electrical requirements will be dependent upon the type of equipment needed for the specific instructional program.

2. Fabrication Shop/Laboratory:

- a. The actual use and design of this space will vary with the specific programs of each School District and may accommodate more than one laboratory.
- b. Location shall be adjacent to the Computer Laboratory and the Technology Shop/Laboratory.
- c. The space should be accessible to service vehicles and have service entrances and exits adjacent to driveways. This will facilitate the delivery of supplies, materials and equipment. The space may be used after normal school hours.
- d. Ceiling heights should be a minimum of 14 feet.
- e. Allow enough space between workstations and equipment for free flow of traffic and maintenance of equipment.
- f. The space(s) shall be equipped with exhaust systems and dust collection and disposal systems to accommodate the particular equipment being used by the specific instructional program.
- g. Wet areas may be required by the specific instructional program.
- h. Electrical requirements will be dependent upon the type of equipment needed for the specific instructional program.

3. Storage:

- a. This space must be located for convenient access to both of the Shop/Laboratories and for the delivery of supplies, materials and equipment.
- b. Design the space for maximum wall storage area.

SQUARE FEET SUMMARY:

A. Multi-Purpose Shop/Laboratory Spaces:

1. Technology Shop/Laboratory _____ sf
2. Fabrication Shop/Laboratory _____
3. Storage _____

Multi-Purpose Shop/Laboratory Spaces Total _____ **SF**

COMPUTER LABORATORY

SPACE DESCRIPTION:

The Computer Laboratory should provide a learning environment that reflects the image of a professional technology oriented workplace. Learning modules may include units in electricity, electronics, energy/power mechanics, applied physics, research and design, graphic communications, computer problem solving, flight technology, rocketry and space technology, transportation, robotics and automation, desk top publishing, audio broadcasting, engineering structures, computer graphics/animation and computer applications.

This space should be designed for flexibility for future room and equipment reconfigurations. The use of built-in work modules is discouraged because of its lack of flexibility.

Locate adjacent to the Multi-Purpose Shop/Lab spaces.

A. Computer Laboratory Spaces:

1. General Requirements
2. Electrical Requirements

DESIGN CRITERIA:

All areas shall be ADA compliant.

A. Computer Laboratory Spaces:

1. General Requirements:

- a. Provide work modules or room space for work modules for _____ students working in groups of two. Counter depth should be determined by the space required for the equipment to be used by each module. Provide shelving for videotapes, headphones, supplies and student notebooks for each module. Work module wall height should not be higher than 54 inches to permit visual supervision by teachers.
- b. Provide space for a teacher station in the middle of the work module area.
- c. Provide open storage for:
 1. Safety Equipment
 2. Heavy-duty shelves in sections to accommodate _____ notebooks each.
 3. Reference books and materials, videotapes and computer discs.
- d. All aisles around work modules should be a minimum of 48 inches wide.
- e. Provide acoustic treatments that minimize noise levels.
- f. Provide natural and artificial light. Light levels should be uniform and provide illumination levels consistent with safe equipment operation. Window sill heights should not be lower than 48 inches above the floor.

At least one window sash should be operable with screens provided. Blinds should be provided on all view windows.

g. Provide an eye wash station with drain and drinking fountain.

h. Casework should consist of 12 to 14 lineal feet of base and upper storage cabinets. Provide one 24 inch deep x 12 inch wide x 84 inch high locking wardrobe cabinet for teacher coats and personal items. Provide a deep stainless steel sink with gooseneck faucet, blade handles and hot and cold water.

i. Provide whiteboards with marker rails and tack boards.

2. Electrical Requirements:

a. Coordinate location of 120 volt single phase and 208 volt three phase convenience receptacles.

b. Provide electrical distribution via overhead drop cords as needed for modules. Provide one 120 volt duplex receptacle every eight feet of wall length or a continuous plug mold. Locate receptacles and plug molds 42 inches above the floor. The start switch for each piece of equipment should be placed within easy reach of the operator and should be a magnetic switch.

c. Provide approximately 40% reserve capacity for future equipment.

d. Locate room light control switches in the room to be easily accessible to teachers. Provide a master switch near the teaching station to control receptacles for all computers and AV equipment. Provide lighting levels of 50 foot candles maintained at 36 inches above the floor.

SQUARE FEET SUMMARY:

A. Computer Laboratory Spaces:

Computer Laboratory _____ sf

Computer Laboratory Spaces Total _____ SF

BUSINESS EDUCATION

SPACE DESCRIPTION:

This space should provide space for business/marketing education that is subject to rapid change to meet the needs of in the market place. Thus the instructional space should be designed to accommodate change.

The classroom spaces should each be designed to accommodate _____ students. These classrooms should be grouped together.

A. Business Education Spaces:

1. Keyboard/Business Machine Laboratory
2. Business/Marketing Classroom
3. Teacher Workroom

DESIGN CRITERIA:

Provide daylighting in all areas with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Business Education Spaces:

Ceiling height should be a minimum of 10'-0".

1. Keyboard/Business Machine Laboratory:

- a. This laboratory will consist of general keyboarding, computers and general business machine instruction. Room arrangement should accommodate _____ students using machines, an area for lectures/demonstrations and an area for deskwork.
- b. A window should be place in the wall between the lab and the Business/Marketing Classroom for supervision.
- c. Provide 16 feet of whiteboard and 8 feet of tackboard.
- d. Casework should consist of 16 lineal feet of base cabinet with adjustable shelves and upper cabinets. All cabinets should be lockable.
- e. Blinds should be provided on all view windows to accommodate darkening the room.
- f. Provide one 60 inch x 60 inch projection screen.
- g. Provide two video monitors that are ceiling mounted and located for viewing by all students.
- h. Provide electrical power for all computers and business machines with an override switch at the teacher station. Provide data cabling or wireless network for all computer work.
- i. Lighting should be indirect with dimming capability. Switching should be located near the teacher station.

2. Business/Marketing Classroom:

- a. Provide a general classroom to accommodate _____ students.

3. Teacher Workroom:

- a. Provide space for two teachers with built-in desks and file cabinets.

- b. Provide 24 inch deep storage cabinets with adjustable shelving on one wall of the room.
- c. Provide electrical receptacles or plug mold above the built-in desk area.
- d. Lighting shall be direct/indirect or indirect.

SQUARE FEET SUMMARY:

A. Business Education Spaces:

- 1. Keyboard/Business Machine Laboratory _____ sf
- 2. Business/Marketing Classroom _____
- 3. Teacher Workroom _____

Business Education Spaces Total _____ SF

SAMPLE

FAMILY AND CONSUMER STUDIES

SPACE DESCRIPTION:

The actual use and design of this space will vary with the specific programs of each School District. Programs offered are changing to reflect changing family lifestyles as well as teaching methods. This area should be designed with the flexibility to meet interdisciplinary and other team partnerships. Classrooms need to be multi-functional to provide for teaching in a traditional classroom mode to small group, to labs and hands-on activities.

The Family and Consumer Studies area should be located on the ground floor and near the faculty parking area to facilitate grocery delivery.

A. Family and Consumer Studies Spaces:

1. Classroom/Multi-Use Lab
2. Storage
3. Teacher Workroom

DESIGN CRITERIA:

Provide daylighting in all areas, except storage, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Family and Consumer Studies Spaces:

1. Classroom/Multi-Use Lab:

- a. This space should function as a regular classroom for lectures, presentations, demonstrations and small group activities. It will, also, contain modules for hands-on labs.
- b. The modules should be placed along the perimeter with the center for classroom teaching. There are two types of modules: Foods modules and Clothing modules. The number of modules will depend on the specific program and the number of students.
- c. Food Modules: Each module should be a unit kitchen which includes;
 1. Range equipped with vent hood.
 2. Double compartment, stainless steel sink with garbage disposal.
 3. Nine lineal feet of workable counter surface with lower and upper cabinets. One full height, lockable pantry cabinet with adjustable shelves.
 4. Dishwasher, either portable or built-in.
 5. Upright refrigerator/freezer.
- d. Clothing Modules: Each module should include;
 1. Wardrobe unit for hanging clothes.
 2. Tote tray cabinet with one tote tray per student.
 3. Space for three sewing machines.
 4. Fitting room with triple mirror.
 5. Built-in ironing board with storage for pressing equipment and irons.

- e. Sixteen feet of whiteboard and eight feet of tackboard.

2. Storage:

- a. Storage space should accommodate the following:
 - 1. Textbooks, reference books and printed materials.
 - 2. Equipment for use in classroom and modules..
 - 3. Classroom supplies.

3. Teacher Workroom:

- a. Space for desks, file cabinets.
- b. Adjustable shelving for books and videos.
- c. Window to classroom for supervision.

SQUARE FEET SUMMARY:

A. Family and Consumer Studies Spaces:

- 1. Classroom/Multi-Use Lab _____ sf
- 2. Storage _____
- 3. Teacher Workroom _____

Family and Consumer Studies Spaces Total _____ **SF**

MEDIA CENTER

SPACE DESCRIPTION:

The Media Center is the academic core of the building. It should have a high degree of visibility to students, teachers and visitors. The Media Center is used for individual study group study, group instruction and conferences. The prime function of the library is to teach students how to gather information and therefore should be considered a “teaching station”.

Community use of the Media Center is also encouraged. Staffing and public hours need to be discussed and agreed upon.

A. Instructional Component of Media Center Spaces:

1. Instructional Seating/Stacks Area
2. Student Media Production Center

B. Support Component of Media Center Spaces:

1. Circulation
2. Processing/Learning Resources
3. Media Production/Workroom
4. Equipment Room
5. Periodicals
6. Office
7. Conference/Small Group

DESIGN CRITERIA:

Minimum ceiling height shall be 12'-0" in the main room, 10'-0" in the Student Media Production room and 9'-4" in the support areas.

Provide daylighting in all areas, except in electronic equipment rooms, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant..

A. Media Center Spaces:

1. Instructional Seating/Stacks Area:

- a. This is the body of the Media Center from which everything should be serviceable. Stacks in the center shall be no more than 48 inches high. Seating in this area should hold a group of ____ students. This area should accommodate a large group as well as individuals or small groups of students working simultaneously. Space should allow for both classroom use of these resources as well as independent users.
- b. Size of the Media Center is estimated at 12,000 to 15,000 volumes. Shelf space if figured at one inch per volume. Oversize volumes require that some shelving be adjustable. Traffic patterns in this space should be structured to allow movement with the least disturbance to people in the study area. There will be shelving on the perimeter of the space.

- c. A minimum of 25 multi-media computers, printers shall be spaced throughout the Media Center.
- d. Provide room in the student area for at least one copier for student use.
- e. Blinds should be provided on all view windows.
- f. Minimize reverberation to avoid disturbance caused by multiple simultaneous activities. Do not use angled or vaulted without acoustical absorptive materials on all angled surfaces.
- g. A 50 foot candle minimum should be provided at each reading station. Separate lighting control is required for each of the activity spaces as well as for display cases.
- h. The HVAC system should be separately zoned from those parts of the building that are not mechanically conditioned year-round. Special attention must be given to adequate ventilation and humidity control to prevent mold and mildew year-round. Computer hardware and software must be protected from temperature and humidity extremes.

2. Student Media Production Center:

- a. Provide a room for the following activities: student broadcasting, use of scanners, digital cameras, poster maker, video cameras and video editors and six computer workstations. The room should support the activities of up to _____ students. Provide a closet and/or millwork with locking doors adequate to house props and equipment.
- b. Dual lighting is required to provide both 50 and 20 foot candles. Provide one track of 8 feet length with 3 adjustable spotlights on a separate circuit with switches.
- c. Provide windows to the Media Center main room for visibility and supervision. Sill heights should not be less than 36 inches above the floor.
- d. Provide for two video runs, one for all school broadcasting and one for the CATV connection. Provide power and data drops for operation of cameras, production lighting, computer workstations, three printers and three scanners.
- e. Provide 15-20 lineal feet of work counter, 34 inches high x 24 inches deep, with base cabinets below and 12 inch deep upper cabinets for storage.

B. Support Component of Media Center Spaces:

1. Circulation:

- a. Provide space for check in/out of learning resources such as books, textbooks, audio/visual materials and equipment and space for circulation related tasks such as computing, filing, record keeping and security encoding devices.
- b. The circulation desk and rear counter should be designed as a practical, functional piece of casework. Similarly, the circulation desk should be treated as a long-term investment that is not custom designed around one person's immediate needs but rather the needs of numerous individuals who will work at the desk in the future. Desks that are deeper than 30 inches may inhibit students reaching for material being handed to them.

Semi-circular desks generally waste too much space behind the desk, sacrificing floor space for student use. If stand-up transaction tops are used in front of the circulation desk, the top should be 10 to 12 inches deep so that books and other items can be placed on the top.

2. Processing/Learning Resources:

- a. This room provides central storage and retrieval for books and learning resources including audio/visual and non-print materials. Other curriculum materials such as, globes and oversized materials such as flat and roller-type maps, posters, charts will also be stored.
- b. Wall shelving is required near the workstation for processing, repair and reserve of learning resources.
- c. Provide 30 inch high counter space for computer workstation and space for storage of materials and an optional 34 inch high counter space for preview of materials and for additional workstations for aides and volunteers.
- d. Wall cabinets are optional.
- e. Provide large shelves, vertical slot shelving and cubbyhole storage for rolled charts, maps and posters. Provide pegboard hooks for storage of roller-type maps.
- f. Provide floor space for a high-density shelving system to accommodate storage of various types of print and non-print media.

3. Media Production/Workroom:

- a. Provide a work area to prepare library media and textbook learning resources for inclusion into the Media Center collection and preview, reserve, return and repair of audio/visual materials. The room is used as a work area for Media Center personnel, staff and students performing tasks such as copying, collating, publishing, mounting and laminating.
- b. Equipment may include a computer station, printer, copy machine, paper cutter, letter die cutter and bookbinding machines. A 220V copy machine requiring a dedicated 20 amp circuit may be located in this area. This copier requires floor space approximately 4 feet x 7 feet.
- c. Base cabinets must accommodate 30 inch high sit-down workstations with drawers and a 34 inch high peninsula or work island with drawers. Vertical slot storage for poster board is also required. Provide work sink.
- d. Provide wall cabinets above workstations and equipment counters.
- e. Provide 20 lineal feet of open, adjustable shelving.

4. Equipment Room:

- a. This room provides storage and retrieval for large equipment items such as VCR's, monitors, and computers as well as small items such as tape recorders, CD/DVD players, microphones and digital cameras. Supplies such as bulbs, cords and headphones are also stored.
- b. The space accommodates minor equipment repair and maintenance functions and provides a holding area for pickup and delivery of equipment needing repair. Provide small workbench with overhead lighting and electrical receptacles.

- c. Provide direct access to the circulation desk and the main corridor. A rectangular room configuration is preferred.
- d. Provide 34 inch high counter/work surface.
- e. Provide full height wall storage cabinets with adjustable shelves and doors.
- f. Provide open, adjustable, sturdy shelving with varying depths.

5. Periodicals:

- a. Provide an area for storage and retrieval of periodicals and software.

6. Office:

- a. Provide an office to accommodate a desk with a computer station and floor space to accommodate storage cabinets, bookshelves and a wardrobe unit.
- b. Provide windows into the Media Center for supervision. Window sill height should not be less than 36 inches above the floor.

7. Conference/Small Group:

- a. The room shall be able to accommodate a conference table and chairs for small group meetings and student work space.

SQUARE FEET SUMMARY:

A. Instructional Component of Media Center Spaces:

- | | |
|--------------------------------------|----------|
| 1. Instructional Seating/Stacks Area | _____ sf |
| 2. Student Media Production Center | _____ |

Sub-Total of Instructional Components	_____ SF
---------------------------------------	-----------------

B. Support Component of Media Center Spaces:

- | | |
|----------------------------------|-------|
| 1. Circulation | _____ |
| 2. Processing/Learning Resources | _____ |
| 3. Media Production/Workroom | _____ |
| 4. Equipment Room | _____ |
| 5. Periodicals | _____ |
| 6. Office | _____ |
| 7. Conference/Small Group | _____ |

Sub-Total of Support Components	_____ SF
---------------------------------	-----------------

Media Center Spaces Total	_____ SF
----------------------------------	-----------------

PHYSICAL EDUCATION

SPACE DESCRIPTION:

This area should have maximum usable space for the multiple presentation of boys and girls physical education activities. The students are actively involved at all times within the limiting factors of space, equipment, supervision and safety. Total involvement in the physical education program as well as the athletic and intramural activities requires flexibility and adaptability of the physical plant and grounds.

The size of area will be determined by the size of the student body and programs offered.

The physical education area of the building should have easy access to outside playfields and facilities.

A. Physical Education Spaces:

1. Gymnasium
2. Auxiliary Gymnasium
3. Auxiliary P.E. Room
4. Weight Room
5. Girls Locker/Shower/Toilet Room with Teacher Office
6. Boys Locker/Shower/Toilet Room with Teacher Office
7. P.E. Storage
8. P. E. Courts, Fields and Events Areas

DESIGN CRITERIA:

Provide daylighting in Gymnasiums, Auxiliary P.E. Room and Weight Room. All areas shall be ADA compliant.

A. Physical Education Spaces:

1. Gymnasium:

- a. The gymnasium should be a single uncluttered space with masonry walls and a hardwood floor. The walls are used for the physical education program as well as the floor. Walls should be flat, straight and smooth and the surface should be easy to clean. Braces, columns, windows, etc. which cause recesses or projections should be avoided.
- b. Minimum interior dimensions shall be 98'-0" x 104'-0" for the floor with space for bleachers. Minimum clear ceiling height should be 25'-0".
- c. Provide bleachers that roll out from the walls on one or both sides of the competition floor to seat at least _____ people. Equip the bleachers on one side with an attached scorekeeper/timer bench.
- d. Provide an electrically operated vinyl/net drop curtain between the two cross courts. The curtain should be a net material at the top and solid material at least 10 feet from the floor. The curtain in the raised position must provide a minimum clearance of 23 feet from the floor. A door or opening is needed on both ends.

- e. Provide rough-in two scoreboards, capable of dual and individual operations with central console locations as indicated above and automatic time-out clock. Control console to be connected by appropriate extension cable to an outlet in the wall behind the bleachers.
- f. Provide a public address system that will interface with the paging system.
- g. Provide the following equipment:
 - 1. 28 floor inserts for gym equipment.
 - 2. Three sets of safety suspension systems with hoists.
 - 3. Six electrically operated, glass swing-up basketball backboards with breakaway rims. No exits should be located behind the main goals. Crash pads should be wall-mounted behind all goals.
- h. Markings on the gym floor should accommodate; competition basketball floor (50 feet x 84 feet), two basketball cross courts (42 feet x 74 feet each), one competition volleyball court and two volleyball cross courts. Markings should be in accordance with established standards.
- i. Acoustics should be addressed through the use of acoustic metal deck and acoustically perforated CMU walls or sound absorbing panels. Sound absorbing panels should be impact resistant.
- j. Metal switch and receptacle cover plates and locking metal covers on all light switches, basketball goals and net drop switches are required.

2. Auxiliary Gymnasium:

- a. The auxiliary gymnasium should be a single uncluttered space with masonry walls and hardwood or synthetic athletic surfacing floor. Walls should be flat, straight and smooth and the surface should be easy to clean. Braces, columns, windows, etc. which cause recesses or projections should be avoided.
- b. Minimum interior dimensions shall be ____ feet x ____ feet with a 25'-0" ceiling height.
- c. Provide the following equipment:
 - 1. 28 floor inserts for gym equipment.
 - 2. Three sets of safety suspension systems with hoists.
 - 3. Two electrically operated swing-up and 4 fixed basketball goals. Crash pads should be wall-mounted behind all goals.
- d. Markings on the gym floor should accommodate; one competition basketball floor (50 feet x 84 feet), free throw lines for side goals and one competition volleyball court. Markings should be in accordance with established standards.
- e. Acoustics should be addressed through use of acoustic metal deck and acoustically perforated CMU walls or sound absorbing panels. Sound absorbing panels should be impact resistant.
- f. Metal switch and receptacle cover plates and locking metal covers on all light switches and basketball goals are required.

3. Auxiliary P.E. Room:

- a. This space should be a single uncluttered space with masonry walls and synthetic athletic surfacing floor. Walls should be flat, straight and

- smooth and the surface should be easy to clean. Braces, columns, windows, etc. which cause recesses or projections should be avoided.
- b. Minimum ceiling height should be 12'-0", preferably 14'-0".
 - c. Acoustics should be addressed to reduce reverberation times.
 - d. Metal switch and receptacle cover plates and locking metal covers on all light switches are required.

4. Weight Room:

- a. Locate this space conveniently to the gymnasium, auxiliary gymnasium and auxiliary P.E. room. Access should be from a pair of doors to facilitate moving of equipment.
- b. Minimum ceiling height should be 12'-0".
- c. Flooring should be an interlocking rubber mat or similar resilient flooring.
- d. Provide an 8'-0" high x 12'-0" wide wall mounted, non-breakable mirror.

5. Girls Locker/Shower/Toilet Room with Teacher/Coach Office:

- a. Locker area:
 - 1. Provide an appropriate number of 12 inch wide x 12 inch deep x 18 inch high P.E. lockers with built-in locks.
 - 2. Provide an appropriate number of 15 inch wide x 15 inch deep x 36 inch high athletic lockers with built-in locks.
 - 3. Provide bench seating between locker banks.
 - 4. Provide wall mounted hair dryer, a non-breakable mirror and one drinking fountain.
- b. Shower area:
 - 1. The shower area should be located adjacent to the locker area with good traffic flow. This area should be separated from the locker room with at least a 5'-0" high visual barrier.
 - 2. Provide private shower stalls with dressing area, one of which is handicapped accessible.
 - 3. The shower shall be equipped with preset tempered water controls.
- c. Toilet area:
 - 1. Provide 3 water closets and 2 lavatories, with one water closet and lavatory handicapped accessible.
- d. Teacher/Coach Office;
 - 1. Provide an office between the gymnasium and the girls locker room with a door to the gym and a visually screened door to the locker room.
 - 2. Provide a non-breakable window 42 inches above the floor into the gymnasium for supervision.
 - 3. Provide a separate area adjoining the office for:
 - a. Six 12 inch wide x 15 inch deep x 60 inch high lockers.
 - b. Space for dressing and a handicapped accessible private shower, water closet and lavatory.

6. Boys Locker/Shower/Toilet Room with Teacher/Coach Office:

a. Locker area:

1. Provide an appropriate number of 12 inch wide x 12 inch deep x 18 inch high P.E. lockers with built-in locks.
2. Provide an appropriate number of 15 inch wide x 15 inch deep x 36 inch high athletic lockers with built-in locks.
3. Provide bench seating between locker banks.
4. Provide wall mounted hair dryers, a non-breakable mirror and one drinking fountain.

b. Shower area:

1. The shower area should be located adjacent to the locker area with good traffic flow. This area should be separated from the locker room with at least a 5'-0" high visual barrier.
2. Provide private shower stalls with dressing area, one of which is handicapped accessible.
3. The showers shall be equipped with preset tempered water controls.

c. Toilet area:

1. Provide 3 urinals, 2 water closets and 2 lavatories with one of each handicapped accessible.

d. Teacher/Coach Office:

1. Provide an office between the gymnasium and the boys locker room with a door to the gym and a visually screened door to the locker room.
2. Provide a non-breakable window 42 inches above the floor into the gymnasium for supervision.
3. Provide a separate area adjoining the office for:
 - a. Six 12 inch wide x 15 inch deep x 60 inch high lockers.
 - b. Space for dressing and a handicapped accessible private shower, water closet and lavatory.

7. P.E. Storage:

- a. The room must be directly accessible from double doors from the gymnasium to facilitate movement of large apparatus and team sports equipment. Open structure ceilings are recommended.
- b. Provide shelving that is appropriate to the type of equipment to be stored. Locking metal equipment cages may be provided if needed.
- c. The remainder of the room area should be open to allow for large equipment storage.

8. P.E. Courts, Fields and Events Areas:

The outside Physical Education facilities, which are an integral part of the entire Physical Education program, are contained in a separate document.

SQUARE FEET SUMMARY:

A. Physical Education Spaces:

- | | |
|--|----------|
| 1. Gymnasium | _____ sf |
| 2. Auxiliary Gymnasium | _____ |
| 3. Auxiliary P.E. Room | _____ |
| 4. Weight Room | _____ |
| 5. Girls Locker/Shower/Toilet with Teacher/Coach Office | _____ |
| 6. Boys Locker/Shower/Toilet with Teacher/Coach Office | _____ |
| 7. P.E. Storage | _____ |
| 8. P.E. Courts, Fields and Event Areas
(See Site Development document.) | |

Physical Education Spaces Total _____ **SF**

AUDITORIUM

SPACE DESCRIPTION:

The high school auditorium is utilized for many activities that will be open to the public. For many visitors this will be their only contact with the school. The facility must be designed to instill in visitors a favorable impression of the school.

The auditorium is a special use facility that must be configured to allow multiple use to the greatest extent possible. As the main performance space, it must be suitable for assemblies, theater, films, special speakers and large group instruction and testing. Acoustical and lighting control must be on a professional scale but also in the realm of teaching medium. Space should be provided for seating _____, a platform area that will provide full production space (both vertically and horizontally), adequate lobby area for large group meetings and adequate space and position of a projection and control booth.

The commons area can act as a lobby. The auditorium should be accessible to the main corridor system and have access to the control booth if possible. Provide catwalks for safe access to lighting/sound equipment. Ideally, access to the catwalk should be from an adjacent upper level space in lieu of a wall mounted vertical access ladder.

The platform area should be located directly off of a loading dock and be adjacent to the music area.

If an auditorium is not provided, productions will take place in the Commons/Cafeteria/Assembly space (See following section).

A. Auditorium Spaces:

1. Seating (house)
2. Stage
3. Control Booth
4. Director's Office
5. Dressing Rooms
6. Stagecraft Workroom and Storage

DESIGN CRITERIA:

All areas shall be ADA compliant.

A. Auditorium Spaces:

1. Seating (house):

- a. The seating area contains the general seating, entry vestibule, orchestra pit, ticket office and access to the control booth.
- b. Provide fixed seating for _____.
- c. The entry vestibule should be located adjacent to the ticket office and the student commons area.
- d. Provide a ticket sales area adjacent to the student commons with counter space and accessible ticket sales windows.

- e. Excellent site lines and acoustical characteristics are essential from all seats.
- f. Light levels in this area should be variable to a maximum of 15 foot candles at the chair height.

2. Stage:

- a. The stage should provide the necessary components for professional performances. Flexibility should be inherent in all systems to allow maximum educational benefit as well as production benefit.
- b. The stage should have a 50 foot minimum side-to-side proscenium opening with tormentors that are adjustable for side to side, a minimum 30 foot depth.
- c. Direct exterior access from this area with a 10 foot x 10 foot overhead door to a loading dock area is needed for transfer of props. Storage area should be adjacent to this door.
- f. The floor should be hardwood and wall surfaces should be durable and easy to clean.
- e. All house and stage lights must be controlled from this area as well as form the control booth.

3. Control Booth:

- a. The control booth should house the projection room and an observation deck. These should be located in above or on the seating side of the entry vestibule or ticket office.
- b. Glass facing the stage should be operable windows.
- c. All house and stage lights must be controllable from this room.

4. Director's Office:

- a. The director's office should be located at the main entry level with access to the control booth.

5. Dressing Rooms:

- a. Provide two dressing rooms, one for women and one for men.
- b. Provide a minimum of 10 lineal feet of counter space with two sinks, mirrors and incandescent lighting at the mirrors in each room.
- c. Provide a minimum of 5 lineal feet of space for hanging clothes.

6. Stagecraft Workroom and Storage:

- a. This space should be located near the stage and be accessible to the stage with a minimum 10 foot x 10 foot overhead door. Floor level must be the same as the stage.
- b. Access to the loading dock is essential for delivery of materials and equipment.

SQUARE FEET SUMMARY:

A. Auditorium Spaces:

- | | |
|------------------------------------|----------|
| 1. Seating (house) | _____ sf |
| 2. Stage | _____ |
| 3. Control Booth | _____ |
| 4. Director's Office | _____ |
| 5. Dressing Rooms ____ @ ____ sf | _____ |
| 7. Stagecraft Workroom and Storage | _____ |

Auditorium Spaces Total _____ **SF**

SAMPLE

COMMONS/CAFETERIA

SPACE DESCRIPTION:

The Commons/Cafeteria is a multi-use room that combines the cafeteria seating area for food service operations with other student activities.

Activities that take place in the room in addition to cafeteria functions are informal group study, student socializing, instructional films and special programs presented after school hours.

A. Commons/Cafeteria/Assembly Spaces:

1. Seating Area
2. Table and Chair Storage

DESIGN CRITERIA:

Provide daylighting in the seating area with a minimum of 20-30 fc of uniform daylighting throughout the space. All areas must be ADA compliant.

A. Commons/Cafeteria/Assembly Spaces:

1. Seating Area:

- a. This area should be designed to seat _____ persons at tables and chairs.
- b. The minimum ceiling height should be 14'-0".
- c. The space should be designed without a tiered floor
- d. Windows to the exterior are required. Minimum sill heights should not be lower than 24 inches above the floor. Provide blinds for darkening the space.
- e. Acoustical treatment is required to produce low reverberation times and high sound absorption.

2. Table and Chair Storage:

- a. Provide storage adjacent to the Commons/Cafeteria for storage of tables and chairs. This room should accommodate the storage for all tables and chairs to be used in the space.
- b. Provide large double doors for ease of movement of tables and chairs.

SQUARE FEET SUMMARY:

A. Commons/Cafeteria/Assembly Spaces:

1. Seating Area _____ sf
2. Table and Chair Storage _____

Commons/Cafeteria/Assembly Spaces Total _____ **SF**

KITCHEN

SPACE DESCRIPTION:

The kitchen, providing space for personnel, delivery, storage, preparation, serving and cleanup of school food service, contains the following components:

A. Kitchen Spaces:

1. Receiving Area
2. Dry Storage
3. Cooler/Freezer
4. Management Area
5. Preparation Kitchen Area
6. Serving Kitchen Area
7. Dishwashing
8. Locker/Toilet Room
9. Custodial/Laundry Room

DESIGN CRITERIA:

The size and configuration of the kitchen may vary and shall be determined by the School District for the facility that it serves. All areas shall be ADA compliant.

A. Kitchen Spaces:

1. Locate the kitchen contiguous with the cafeteria. Provide a loading dock with ramp and unobstructed outside access from the service drive. The ceiling height should be a minimum of 10'-0". Acoustical sound isolation is required between the kitchen and cafeteria as well as instructional areas.

SQUARE FEET SUMMARY:

Kitchen Spaces Total

_____ SF

CIRCULATION

SPACE DESCRIPTION:

The design and materials selected should result in circulation spaces that are durable, easily maintained, attractive, warm and non-institutional in appearance. Circulation spaces should be direct, simple and logical as a way-finding system into and through the building. All circulation spaces should use at least 50% daylighting for illumination.

A. Circulation Spaces:

1. Entries
2. Lobby
3. Corridors

DESIGN CRITERIA:

A. Circulation Spaces:

1. Entries:

- a. Entries should be well defined from the exterior.
- b. If there are separate bus rider entries and automobile rider entries they should be readily identifiable as such.
- c. Vestibules are required at high use entrances and exits.
- d. Floors at all entries should have walk-off mats.
- e. Walls should be considered of durable materials, similar to exterior materials.
- f. Ceiling heights shall be a minimum of 10'-0".

2. Lobby:

- a. The floor material should be durable and easy to clean.
- b. Provide built-in lighted display cases in the main lobby.
- c. Ceiling heights shall be a minimum of 12'-0".
- d. The main lobby shall be adjacent to the Administration area.
- e. Public Access: Provide lockable security separations to isolate the building areas that may be used after school hours by the public, such as the gymnasium, music, commons/cafeteria and auditorium.
- f. Signage: Provide directional signs to the main areas of the building. Provide a dedication plaque. All signage shall be ADA compliant.

3. Corridors:

- a. Floors: Either resilient flooring or carpet.
- b. Walls: The preferred corridor wall is a 48 inch high durable surface wainscot with gypsum board walls above finished with heavy mil thickness paint. The wall finish will be high impact gypsum board on the lower 48 inches with the remainder of the wall standard gypsum board finished with heavy mil thickness paint.
- b. Ceiling height shall be a minimum of 10'-0".
- c. Acoustics: Minimize reverberation time to avoid disturbance caused by multiple simultaneous activities.

- d. Doors opening into corridors shall be recessed. Recognizing that staff and students often prefer open corridor doors, use electromagnetic hold open devices to maintain the integrity of the exit system.
- e. Provide tack strips or other display systems to be mounted at various heights for display.
- f. Signage: Provide room name, number and replaceable teacher name plaques at each doorway. All signage shall be ADA compliant.
- g. Electrical Power: Provide 110V general use duplex receptacles at 50 feet minimum spacing throughout the corridor system.
- h. Lighting: Corridor lighting, as a supplement to daylighting, shall be 20 foot candles at 36 inches above the floor minimum.
- i. Corridor Widths: Corridors that are too narrow and congested result in excessive noise, improper student behavior and increased maintenance costs. Minimum corridor widths are:
- | | |
|-------------------------------------|--------|
| 1. Serving less than ten classrooms | 9'-0" |
| 2. Serving more than ten classrooms | 10'-0" |
| 3. Main corridors | 12'-0" |
| 4. Lockers along one wall add | 2'-0" |
| 5. Lockers along two walls add | 3'-0" |

CUSTODIAL

SPACE DESCRIPTION:

Custodial support spaces are required for the proper maintenance and operation of the facility.

A. Custodial Spaces:

1. Facility Manager Office
2. Custodial Closets
3. Custodial Storage Room
4. Outside Equipment Storage

DESIGN CRITERIA:

A. Custodial Spaces:

1. Facility Manager Office:

- a. This space is a combination office and receiving space which should be located close to the service entrance for receiving.
- b. The roof access hatch with built-in vertical ladder should be located in this space.
- c. Provide general lighting, power, data and a telephone.

2. Custodial Closets:

- a. Provide one per instructional suite.
- b. Provide a minimum of one for the area that includes the gymnasium, commons/cafeteria and core areas.
- c. Provide one for the kitchen.
- d. Provide in each custodial closet:
 1. One floor mounted 24 inch x 24 inch service sink with a maximum 6 inch high lip and heavy-duty braced faucet with hot and cold water.
 2. 48 inch high wainscot of FRP around service sink.
 3. Mop holder.
 4. 20 lineal feet of 12 inch deep heavy-duty adjustable shelving.

3. Custodial Storage Room:

- a. Provide space to store indoor floor cleaning equipment such as extractors, vacuum cleaners, buffers and floor machines.
- b. Electrical transformers, panels and sub-panels must not be located in custodial closets or storage rooms.
- c. The room is intended to keep equipment and supplies from being stored in electrical, mechanical and communications rooms.

MECHANICAL, ELECTRICAL AND COMMUNICATIONS ROOMS

DESIGN CRITERIA:

A. Mechanical and Electrical Rooms:

1. Rooms must be of adequate size to facilitate maintenance of equipment and movement of personnel during normal maintenance procedures.
2. Floors should be constructed at grade level.
3. Floor material should be painted concrete. Walls should be painted. Ceilings should be as required by the building code.
4. Direct exterior access should be through a pair of metal doors. The door opening size must permit passage of the largest piece of equipment and equipment maintenance items. Room access must also be provided from an internal corridor.
5. Acoustical isolation and sound attenuation from adjacent rooms and areas is a critical consideration in the location and design of mechanical and electrical rooms.
6. If access to the roof is needed in these rooms it may be by roof hatches and vertical ladders.
7. Provide at least one 110V general duplex receptacle in each space. Provide 30 foot candles of lighting at 36 inches above the floor maintained.

B. Communications Rooms:

1. Each school is required to have a communications room to house all building special systems control equipment. When data cable-run lengths exceed 300 total lineal feet, the communications room must be connected to remote intermediate data closets. The equipment contained in this room is costly and environmentally sensitive, for this reason the room is not permitted to be used as a building storage room. Key access should be limited.
2. Locate the room centrally within the building and provide a door from the corridor.
3. Ceiling height should be a minimum of 10'-0".
4. The floor may be either painted concrete or vinyl composition tile.
5. The wall finish should be $\frac{3}{4}$ inch nonflammable unpainted plywood.
6. Provide cooling for the room.
7. The room should be of adequate size to accommodate the equipment contained therein and room to maintain that equipment.

PLUMBING

SPACE DESCRIPTION OF PLUMBING SPACES:

A. Plumbing Spaces:

1. Instructional Area Student Toilets
2. Instructional Area Staff Toilets
3. Instructional Area Work Sinks
4. Core Area Public Toilets
5. Administrative Area and Staff Toilets
6. Nurse Area Toilet
7. Core Area Work Sinks
8. Drinking Fountains
9. Custodial Closets
10. Kitchen
11. Exterior Keyed Hose Bibs

DESIGN CRITERIA:

A. Plumbing Spaces:

1. Instructional Area Student Toilets: If provided in this area, the number will depend on the number of students and the location of the instructional areas in relation to the commons area.
2. Instructional Area Staff Toilets: Provide one unisex toilet convenient to teacher workroom.
3. Instructional Area Work Sinks: Provide as indicated in each instructional area section.
4. Core Area Public Toilets: These toilets should be located adjacent to the commons area and should accommodate 100% of the total building requirements by student count. This does not relieve the requirements of athletic areas and other special use areas. Toilets may be in two areas to eliminate congestion.
5. Administrative Area and Staff Toilet: Provide two single occupant toilets, one for women and one for men.
6. Nurse Area Toilet: Provide one unisex toilet.
7. Core Area Work Sinks: Provide sinks as described in the specific section for further requirements.
8. Drinking Fountains: Provide a minimum of two in the Core area, near the gymnasium, commons/cafeteria and administration. See specific sections for further requirements.
9. Custodial Closets: Provide one floor mounted sink in each closet.
10. Kitchen: Provide a staff toilet, custodial closet with floor mounted sink and other plumbing as may be required per kitchen design.
11. Exterior Keyed Hose Bibs: Provide one at the kitchen service entrance and others as may be needed.

B. Additional Requirements:

1. Ceilings: Lay-in ceilings are not recommended in the toilets, kitchen or custodial closets.
2. Acoustical Considerations: To the greatest extent possible provide acoustical separation between toilets and adjacent spaces.
3. Fixture Quantities: Provide fixture ratios per the building code and plumbing code. Assume a 50% ratio for each sex.
4. Drinking Fountains: Provide non-refrigerated fountains, meet code fixture quantity requirements.
5. Provide supplemental exhaust for all toilets.

SAMPLE

TECHNOLOGY WIRING STANDARDS

SPACE DESCRIPTION OF WIRING STANDARDS:

All buildings should be constructed to allow for the use of technology infrastructure by all students, faculty and staff. Infrastructure refers to connectivity issues and all necessary frameworks to implement technology.

The use of wireless technology is recommended. It increases the flexibility of the technology system and actually reduces the need for space. One case for this is the use of laptop computers in the classroom that have wireless connections to a contact box. In some cases this approach has removed the need for a “computer lab”.

DESIGN CRITERIA:

A. General:

1. Wireless technology is recommended for use, at least in the classrooms and Media Center. In lieu of wireless technology the standards shown below should be followed.
2. These Educational Specifications provide for design and construction of a Communications Room and the installation of video, voice and data receptacles, conduit and conduit stub-ups with the spaces listed below.
3. Infrastructure must meet industry standards such as those defined by EIA/TIA-568 Telecommunications Cabling Standards, EIA/TIA-569 Commercial Building Standards for telecommunications Pathways and Spaces, and EIA/TIA-607 Commercial Building Grounding and Bonding requirements for telecommunications.
4. *If the infrastructure is not to be installed at the time of original construction, the capability to install these systems at a later date shall be provided.*
5. Ethernet/token ring hubs, work station cables and data patch cables should be installed to support the number of computers to be used plus a 20% growth factor at the time of installation. Additional hubs should be installed once the 20% growth factor is reached.
6. Data cabling shall be at least Category 5E.

B. Video Standards:

1. Video Outlet Locations:
 - a. One per classroom.
 - b. Two in media center.
 - c. One in the gymnasium.
 - d. Two in the commons/cafeteria.
 - e. One in auditorium.
 - f. One in each teacher workroom.
 - g. One in the administrative office.
 - h. One in the principal's office.
 - i. One in the administrative conference room.

C. Voice Standards:

1. Voice (telephone) Outlet Locations:
 - a. One per classroom.
 - b. One in the media center.
 - c. One per media center office and production room.
 - d. Two per administrative office support staff.
 - e. One per fax machine.
 - f. One in gymnasium.
 - g. One in commons/cafeteria.
 - h. One per teacher workroom.
 - i. One per principal or full time staff.
 - j. One per special program.
 - k. One in facility manager office.

If two-piece wire mold strips are required for installation, the wire mold must meet shielding requirements for Category 5E data cable. Provide duplex back boxes for use with wire mold.

D. Data Standards:

1. Data Outlet Locations:
 - a. Five per classroom. One data outlet should be located near or below the video outlet for use with video camera.
 - b. One per administrator and/or in each room in administration area.
 - c. One in facility manager office.
 - d. Two in commons/cafeteria. Coordinate location of one with food service personnel. The other should be near or below video outlet for use with video camera.
 - e. Media Center:
 1. Two for circulation desk.
 2. One for media center specialists office.
 3. Five locations within the Media Center.
 4. One for computer public access catalog.
 - f. One in gymnasium near or below video outlet for use with video camera.
 - g. One in auditorium.
 - h. Fifteen to twenty drops for rooms used as computer labs.

If two-piece wire mold strips are required for installation, the wire mold must meet shielding requirements for Category 5E data cable. Provide duplex back boxes for use with wire mold.

E. Temporary Building Wiring Requirements:

1. One video outlet.
2. Three data outlets and three telephone located in same back box.
3. One wall telephone outlet located near entrance door.

ELECTRICAL AND SPECIAL SYSTEMS

DESIGN CRITERIA:

A. Electrical System Voltages:

1. 480Y/277 volt systems (with transformers for 208Y/120 volt uses) should be provided when connected loads exceed 500 KVA. A cost analysis may warrant maintaining the existing voltage system with addition/renovation projects.
2. Disconnect switches are required for all motors, water heaters and large laundry equipment.

B. Service Entrance:

1. The impact of the short circuit interrupting capacity of the electrical utility at the secondary terminals of its transformer must be used when designing service entrance equipment and panels. Consider placing this capacity on a plaque on the main panel board for future reference.
2. The use of spare conduits from the utility transformer to the main panel for future growth is recommended.

C. Wiring Systems:

1. Copper conductors should be used for feeder circuits from the main panel to the sub-panels.

D. Electrical Panels:

1. Verification should be made that the panels, conductors and the over-current devices for each are coordinated.

E. Grounding:

1. The proper grounding electrode system should be included with the correct size for the grounding “electrode conductors”. Connections to ground rods and a second grounding point are required, such as the building steel or metallic water piping in contact with the earth for at least a 10 foot length. This applies to service entrance panels and step-down transformers.
2. Bonding and grounding diagrams should be included.

F. Illumination:

1. The use of daylighting is recommended to supplement the illumination systems in the building. This recommendation is not only for energy savings but daylighting research has shown that it actually increases the learning ability of the students.
2. Compact fluorescent fixtures should be installed where incandescent fixtures have been used traditionally for wall washing, display cases and down lighting in traffic patterns. Fluorescent lighting fixtures can be installed with equipment used in most desired application for dimming, but where color renditions and brightness control may be critical, such as

performance class settings incandescent spot lighting (track lights) may be used.

3. Incandescent should be avoided due to high operation costs and short lamp life.

4. The use of electronic ballasts and T-8 or T-5 fluorescent lamps in appropriate locations is strongly recommended.

5. Light-emitting diodes (LED) exit lighting fixtures are recommended because of their very long life and very low operating cost. Incandescent exit fixtures should be avoided. Location of exit and emergency lighting fixtures are critical.

G. Energy Lighting Controls:

1. The use of remote switches for lighting in corridors, toilets, gymnasiums and common areas is recommended. These switches should be located in areas accessible only to designated staff. Key-operated switches are a second choice.

2. The use of dual level switching and occupancy sensors is recommended.

H. Audio Enhancement Systems:

1. The system; consisting of a base unit, four speakers, and a wireless microphone; allows use of a hands free, wireless microphone to enhance voice projection. One unit is installed for each teaching station. The system provides the opportunity for all students to hear the teaching instructions whether they are hearing impaired or acoustical conditions of the teaching area do not allow for proper sound transmission.

I. CATV:

1. Cable TV should be installed throughout the school (See Technology Wiring Standards: B. Video Standards for locations.).

2. Cable television control equipment is located in the Communications Room.

J. Central energy Management Systems (CEMS):

1. The CEMS monitors the heating, ventilating and air conditioning (HVAC) systems and reports status information to a central monitor location.

2. CEMS control equipment is located in the Communications Room.

K. Clock System:

1. School clocks should be on a master self-adjusting electrical system.

2. Locate the master controls in the Communications Room.

L. Data Systems:

1. A computer network should be installed throughout the school. The preferred system is a wireless network.

2. Control equipment is located in the Communications Room.

M. Fire Alarm System:

1. A fire alarm system must be installed throughout the school. A fire alarm status panel must be located in the vicinity of the main entrance door.
2. Control equipment is located in the Communications Room.
3. See applicable codes for required locations of fire alarm pull stations and horns.
4. Verify that enough horn/strobe lights are provided for sufficient coverage. Strobe lights are required in toilets.
5. Connect ductwork smoke detectors into the fire alarm system and design to shut down the air-handling units.
6. Provide connections for the kitchen fire extinguishing system to the fire alarm system and the shunt trip mechanisms to disconnect the cooking equipment and the kitchen hood fans.

N. Security System:

1. See Security.

O. Sound Amplification Systems:

1. A sound amplification system will be provided in the Commons/Cafeteria, Gymnasium and Auditorium.
2. The system consists of an amplifier, speakers, two wired microphones and two wireless microphones.
3. Locate operation controls in the areas where they can be easily supervised.

P. Communications System:

1. Thoughtful planning is required to accommodate sufficient numbers and proper locations of computers, telephones, TV, intercom/paging/radio and other integrated communications equipment.
2. For computers and other high-speed electronic equipment, the backbone can be fiber optic cables with "Category 5E" copper cables to the individual items of equipment.
3. Connection to the State Information Highway requires fiber optic cables.
4. Isolation transformers, surge suppression and lightning protection devices should be used to protect all electronic equipment and the panels to which they are connected.
5. Sufficient wire ways should be installed and located for ample expansion.
6. Cable tray over lay-in ceilings in corridors is the most common method of routing communications and computer cables. A wireless network is recommended for data transmission.
7. A programmable phone/paging system should be provided.

8. Communications control equipment is located in the Communications Room.
9. Classrooms should be equipped with a two-way communications system for informational and emergency use. Every classroom should be equipped with a telephone.

SAMPLE

SECURITY

SPACE DESCRIPTION:

Refer to School District Security Plan.

Other than door control, security systems in schools are not a preventative measure. They primarily fulfill a monitoring and annunciation function.

Three methods for creating secure areas are: architectural design, electronic systems and manpower.

DESIGN CRITERIA:

A. Architectural Design:

1. Ensure clear sight lines around the building. (See Site Development documents.)
2. Position Administration adjacent to the main entrance with a security interlock vestibule.
3. Position areas frequented by staff throughout the building.
4. Provide reasons for staff to be seen in the corridors.
5. Eliminate secluded areas.
6. Limit the number of entry points to the building.
7. Design open, visible, bright areas.

B. Electronic Systems:

1. Provide electronic access control at all entrance doors, either card readers or photo ID system.
2. Provide door monitoring system on all exterior doors.
3. Provide a CCTV surveillance system with cameras located at the following areas: a) parking lot(s), b) main entrance and d) main corridors.
4. Building annunciation system (See Electrical and Special Systems, P.)

C. Manpower:

1. No piece of technology or building design can replace the eyes and ears of school staff out and about interacting with students.
2. Position Administration adjacent to the main entrance with a security interlock vestibule. The front desk shall be occupied at all times.
3. Position areas frequented by staff throughout the building and train them on security measures.
4. Provide reasons for staff to be seen in corridors.

SUMMARY

HIGH SCHOOL EDUCATIONAL SPECIFICATIONS FOR _____ STUDENT CAPACITY

_____ students X _____ sf/student = _____ sf

ADMINISTRATION

_____ sf

INSTRUCTIONAL AREAS

SCIENCE

ART

MUSIC

MULTI-PURPOSE SHOP/LABORATORY

COMPUTER LABORATORY

BUSINESS EDUCATION

FAMILY AND CONSUMER STUDIES

MEDIA CENTER

PHYSICAL EDUCATION

AUDITORIUM

COMMONS/CAFETERIA

KITCHEN

NET SQUARE FEET TOTAL

_____ **SF**

NET TO GROSS RATIO (0.31)

GROSS SQUARE FEET TOTAL

_____ **SF**

APPENDIX

SAMPLE